

Claims

[1] Controllers for a heavy duty industrial vehicle, which are a plurality of controllers provided in said heavy duty industrial vehicle equipped with a working machine for performing predetermined work, said plurality of controllers being adapted to control, independently of each other, a plurality of instruments to be controlled, including said working machine, said instruments being provided in said heavy duty industrial vehicle, and characterized in that

a configuration of hardware of said plurality of controllers is entirely common.

[2] The controllers for a heavy duty industrial vehicle according to claim 1, characterized in that

said plurality of controllers are interconnected by a network.

[3] The controllers for a heavy duty industrial vehicle according to claim 1 or 2, characterized in that

software for controlling each of said instruments to be controlled is of a hierarchical structure, driver software at a lower level for directly controlling each of said instruments to be controlled is common, and only application software at an upper

level utilizing said driver software is different according to a function of each of said instruments to be controlled.

[4] The controllers for a heavy duty industrial vehicle according to claim 3, characterized in that rewriting means is provided for making only said application software rewritable.

[5] The controllers for a heavy duty industrial vehicle according to claim 1, 2, 3 or 4, characterized in that

limited operation means is provided for enabling an operation by other said controller so that at least said heavy duty industrial vehicle can be run, even if said controller for controlling said working machine fails or is not connected to said network.